

## West Nile Virus ( WNV )

West Nile virus (WNV) was first recognized in the United States in 1999 as the cause of severe and fatal human illness in New York City. WNV is commonly found in Africa, West and Central Asia, Western Europe and the Middle East. It is not known how the virus was first introduced into the United States, but since the appearance of WNV, it has spread rapidly.

### How is WNV transmitted?

The main way WNV is transmitted is through the bite of a mosquito. Mosquitoes become infected with WNV when they feed on a bird carrying the virus in its blood. The virus can be transmitted to another bird, person, or other animal that the mosquito bites. During blood feeding, the mosquito injects the virus, contained in its saliva, into the bird, animal, or person – where the virus multiplies and may cause illness.

West Nile virus can rarely be transmitted through blood products, blood transfusions and organ transplantation. In 2003, all blood banks will use blood screening tests for West Nile virus. Persons needing a blood transfusion or organ transplant should be aware of the potential risk for WNV infection. Also, based on a recent case in Michigan, it appears that WNV can be transmitted through breast milk.

All residents of areas where the virus activity has been identified are at risk of getting WNV. Less than 1% of the people who get bitten and become infected will get severely ill. In the Louisville Metro area, the potential for finding virus activity is during mosquito season, usually March 15th through October 15th.

## What are the symptoms of WNV?

**Most people who are infected with WNV will not develop symptoms.** Some people may become sick 3 to 15 days after the bite of an infected mosquito. Most people who are infected with WNV will develop a mild illness with fever, headache, body aches, and in some cases skin rash and swollen glands. There are no known long term effects due to mild illness. If you are infected with WNV, it is assumed that your immunity against WNV will be lifelong; however, immunity could fade in later years.

The more severe form of WNV infection, West Nile encephalitis is rare. West Nile encephalitis is an inflammation of the brain with symptoms of headache, high fever, stiff neck, stupor, coma, disorientation, tremors, convulsions, muscle weakness, and paralysis. Some cases of West Nile encephalitis have been fatal. Persons over 50 years of age have the highest risk of more severe disease. It is unknown if immunocompromised persons are at increased risk for WNV.

**Persons with severe or unusual headache should seek medical attention as soon as possible !**

### How is WNV infection treated?

No specific treatment is available for West Nile virus. For the more severe form of WNV, West Nile encephalitis; intensive supportive therapy is required; such as hospitalization, respiratory support (ventilator), use of intravenous fluids, prevention of secondary infections (such as pneumonia, urinary tract infections, etc.) and good nursing care.

## WNV Surveillance

Since 1999, federal, state and local governments have been tracking the WNV infections in birds, mosquitoes, horses, and people. This tracking relies in part on people reporting dead and dying birds and horses. Some states and jurisdictions are no longer collecting dead birds because they have sufficiently established that the virus is in an area, and additional testing will not reveal any more information. Reporting or lab sampling of dying or dead birds during the mosquito season in the Louisville Metro community will be announced through the media.

**You do not get WNV by handling a dead animal.**

If you find a dead or dying animal, avoid touching the animal with your bare hands because of the potential for other diseases. Use gloves or some form of protection on your hands, such as a plastic bag to pick up the dead animal. Place plastic bag with the dead animal and the item or items you used to pick up the dead animal in the trash can for disposal.

### For more information:

Louisville Metro Health Department  
Division of Environmental Health & Protection  
502-574-6650  
Communicable Disease Reporting  
502-574-6677  
[www.health.co.jefferson.ky.us](http://www.health.co.jefferson.ky.us)

Centers for Disease Control and Prevention  
CDC Voice & Fax Information : 1-888-232-322  
<http://www.cdc.gov>

7-03

# West Nile Virus

*Some answers for you!*



*Division of Environmental Health  
and Protection*

**Mosquito Control Program  
502-574-6650**

## What can we do to prevent WNV?

### Personal Protection : avoid mosquito bites !

- Apply insect repellent to exposed skin when you go outdoors. The use of a repellent that contains DEET (N,N-diethyl-meta-toluamide) is the most effective way of protecting yourself from mosquito bites. The more DEET in a repellent, the longer time it gives protection. **DEET concentrations higher than 50% do not increase the length of protection.**
- Use care in applying repellent to children: don't put repellent on their hands, and always be careful to avoid their mouths and eyes.
- Products containing 10% or less DEET are most appropriate for children aged 2 months to 12 years.
- Use more repellent after strenuous exercise, swimming or as directed on the product label.
- Wash the skin where repellent was applied with soap and water after returning indoors.
- Repellents containing DEET must be carefully applied because they can damage plastics, rayon, spandex, and other synthetic fabrics.
- While outdoors, whenever possible; wear protective clothing such as long sleeves, long pants, and socks.
- Spray clothing with repellents containing the chemical permethrin because mosquitoes may bite through thin clothing. Permethrin is non-staining, nearly odorless and maintains its potency for at least 2 weeks, even through several launderings.
- Consider staying indoors between dusk and dawn, which is peak mosquito biting time.

**\* A very small number of children and adults may be sensitive to DEET. If there is a suspected reaction to any insect repellent, wash the area and call the poison control center or seek medical attention.**

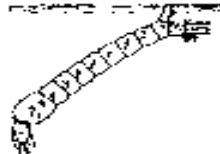
## If you are breeding them.... you are feeding them. STOP raising mosquitoes in your yard !

The main role that people have in contributing to the continuing cycle of West Nile Virus is by providing environments around their homes for the mosquitoes to lay eggs. A female mosquito must lay her eggs in standing or stagnant water. Mosquitoes can progress through their life cycle in 5-10 days.

### Mosquito Life Cycle



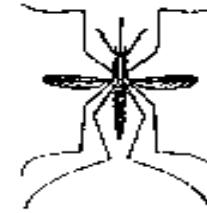
(Eggs)



(Larva)

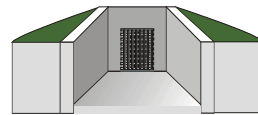


(Pupa)



(Adult)

**Some Problems around the Home that will breed Mosquitoes**  
**Anything that will hold water for 5 to 10 days, such as buckets, trash cans, and old tires are the main breeding sites for mosquitoes in the homeowner's yard.**



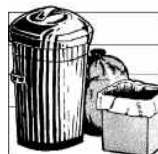
**Drainage easements in your yard.** Clean out debris to eliminate the standing water.



**Bird baths.** Empty every 2-3 days, or add a cap full of bleach.



**Tires without rims.** Water collects on the inside and breeds mosquitoes. Remove or store the tires out of the weather to prevent water collecting



**Garbage cans, overturned garbage can lids, buckets, paint cans, tin cans.** Empty water and replace lids or turn over so the water will not collect .



**Clogged gutters, downspouts and knot holes in trees.** Clean your gutters and all downspouts regularly so they do not hold water. Fill knot holes in trees with sand.



**Children's backyard wading pools, toys such as sand boxes, wagons, plastic sand buckets, and toy storage bins.** Empty the wading pools every 2-3 days and store toys upside down. Cover or keep these items inside so they do not collect water.



**Flower pots without drain holes, the water trays under the flower pots.** Make drain holes and empty the water every 2-3 days.

## Can WNV cause illness in my pet?

Although the vast majority of infections have been identified in birds, WNV has been shown to infect horses, cats, bats, skunks, squirrels, chipmunks and domestic rabbits.

### You cannot get WNV from your pet.

WNV infection in cats and dogs does not appear to cause serious illness. An infected mosquito is the only way the virus can be transmitted to your dog or cat. It is unlikely that a pet could become infected with WNV by eating or playing with a dead, infected animal. If your pet shows signs of illness, contact your veterinarian. Spot flea products are reportedly not effective against mosquitoes. Some flea sprays containing pyrethrins may have some value as repellents.

**Follow all label directions.**

## Who do you call about mosquitoes ?

Residents in the Louisville Metro community can report mosquito breeding sites by calling 502-574-6650. The Mosquito Control program conducts surveillance programs to determine the different kind and numbers of mosquitoes before starting any treatment program. Treatment of standing water with products designed to kill mosquito larvae is known as larvaciding. During extreme mosquito conditions, the use of a treatment known as adulticiding (fogging) may be required. Fogging for adult mosquitoes in your local neighborhood is done only when the surveillance program shows a high number of mosquitoes and the presence of WNV in mosquitoes or animals, especially people.

**Fogging is a temporary solution because new adult mosquitoes hatch out each day. Removing the water where mosquito eggs develop into larvae is the best way to stop breeding mosquitoes around your home!**